The Viper

Space Based Infrared Systems News — August 2001

SBIRS -- The First Step in a Credible Missile Defense for America

SBIRS High preps for Critical Design Review

Lieutenant Jared Faison
External and International Affairs

The SBIRS High system Critical Design Review (CDR) is quickly approaching. It is currently scheduled for August 30 – 31, 2001 at Lockheed Martin's Sunnyvale, CA facility.

"This is a critical milestone in the progress of SBIRS as a whole. We are hoping for a good review," said Colonel Charles Cornell, Deputy System Program Director.

The purpose of the CDR is to confirm that the system design satisfies the performance and engineering requirements of the system specification and Operational Requirements Document. The program office also considers this review an opportunity to provide an integrated picture of the SBIRS High system design.

Sixth BMDO flight test a success for SBIRS too

Lieutenant Scott Schweitzer
Chief, SBIRS Low Engagement Algorithms

When the Ballistic Missile Defense Organization's Exoatmospheric Kill Vehicle slammed into the reconfigured Minuteman II test missile launched from Vandenburg Air Force Base on July 14 all eyes were on the sky, watching the successful intercept.

Behind the scenes on a isolated part of the Hawaiian island of Maui, a select team of specialists from the SBIRS program office were also watching.

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DSP 21 soars into space!

Photo courtesy Lockheed -Martin

Captain Dan Theisen
External and International Affairs

CAPE CANAVERAL, FL—

Early on August 6, the pre-dawn serenity at Cape Canaveral Air Force Station was momentarily interrupted by the deep thundering noise and bright, false sunrise created by a Titan IV-B booster as it lifted the latest Defense Support Program satellite into space.

"I'll never get tired of watching another satellite be sent on it's way to what we hope will be a long operational life for our nation's defense." Colonel Chuck Cornell, Deputy System Program Director for the Space Based Infrared Systems said after the launch.

The flawless countdown and perfect launch made the process look simple at 3:28 a.m. But getting the satellite from storage to space is never an easy task. Despite that, all those involved kept repeating a common theme: *teamwork*.

"We experienced two significant delays," Cornell explained. "But the launch team at the Cape came through for us and kept us moving forward despite the issues they faced. This successful launch is a great tribute to the whole team's hard work."

Cornell went on to emphasize that teamwork was key to getting the launch

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DSP:
'Teamwork' cited as key to Flight 21's flawless launch

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ready and avoiding delays. "Colonel Jones' folks from the 3rd Space Launch Squadron and Colonel Mike Dunn's Launch Programs, and, of course, our always superb DSP launch team did an amazing feat in getting the whole system ready to fly. My hat's off to them."

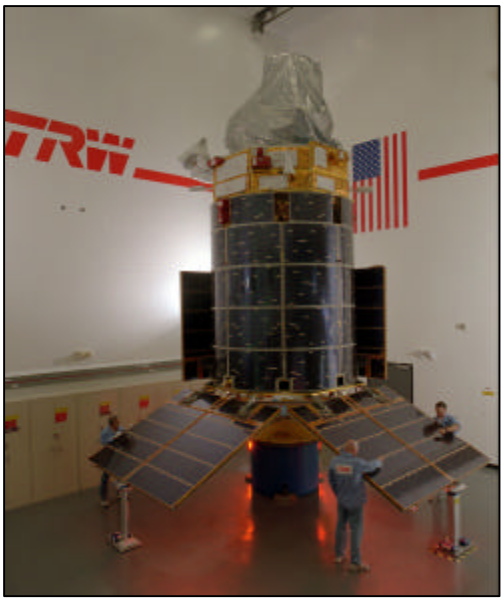
Colonel Dunn echoed the comments on teamwork praising the SBIRS SPO for their efforts to sacrifice a week of margin and shave another from their payload preparation timeline.

"I'm convinced that if the DSP folks hadn't done that, we never would have gotten this launch off before October," Dunn said, indicating the teams' fight to get DSP into space before Cape Canaveral began an extensive maintenance program, making the range unavailable for several months.

"This was truly one team and one fight," Dunn said.

Only a few short hours later DSP Flight 21 was in its proper orbit.

"Now the hard work begins for Colonel Killam's team," Cornell said. Colonel Dudley Killam is the DSP program manager and will lead the early orbit test team in a rigorous set of testing over the next few weeks. The tests, which are intended to ensure both sensor and satellite are working as designed, will culminate on or about September 5.



Left: Flight 21 is shown mounted on a rotator table in a manufacturing high bay at TRW's manufacturing facility in Redondo Beach. Photo courtesy TRW.

Above: Colonel Killam stands beside the satellite prior to shipment to Cape Canaveral Air Force Station, FL.

SBIRS Low to become a part of BMDO Oct 1, 2001

Captain Cheryl Lutes
Team Lead, SBIRS Low IPT

As October 1, 2001, quickly approaches, the Air Force and the Ballistic Missile Defense Organization (BMDO) are taking the necessary measures to ensure the successful transition of SBIRS Low to BMDO.

"This change reinforces and reiterates the importance of SBIRS Low to the overall Ballistic Missile Defense Program," according to Colonel Mark Borkowski, SBIRS System Program Director. "Under this change, we will report directly to BMDO, rather than through the Air Force, for SBIRS Low acquisition decisions."

As identified in last year's National Defense Authorization Act, the primary mission of SBIRS Low is ballistic missile defense. The USAF proposed transferring the SBIRS Low program and its funding responsibility to BMDO in order to adhere to Congressional direction.

The National Defense Authorization Act for Fiscal Year 2001 stated that "the Director of the Ballistic Missile Defense Organization shall have authority for program management for the ballistic missile defense program known on the date of the enactment of this Act as the Space Based Infrared System—Low."

The Act also requires the BMDO Director's approval for establishing or changing technical requirements and for changes to the baseline schedule, and the current budget baseline.

In order to facilitate a successful hand-over, a Memorandum of Agreement (MOA) is in the works. The MOA will be staffed through the Secretary of the Air Force and BMDO Director for concurrence. The MOA addresses things such as who will own the Operational Requirements Document (ORD), provide the Program Executive Officer, and provide funding for the SBIRS Low Program.

The transition is not expected to disrupt the program or influence the day-to-day decisions made by the government team overseeing the two $275M program definition and risk reduction contracts.

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SBIRS Sweeps Base Quarterly Awards!

Lieutenant Jared Faison
External and International Affairs

The April – June 2001 Quarterly Awards were recently handed out as personnel from all over the base competed for the honor of being named a quarterly award winner. The SBIRS program office swept the base-level competition, winning in every category in which a SBIRS nominee was submitted.

"I've only been here for a few months, but already I can see the quality of people in the SPO," Colonel Mark Borkowski, SBIRS system program director said. "The sweep is certainly a tribute to our winners--but also reflects well on the entire SBIRS organization." Congratulations to the winners.

Clockwise from top left Brigadier General Wilson presents awards to: Captain Mike Guetlein and Lieutenant Bob Lyons for senior and junior company grade officer respectively, Patrick Garel for mid-level civilian and Diane Huerta-Lomeli for admin-level civilian.

Scott Horowitz on 4th Shuttle mission

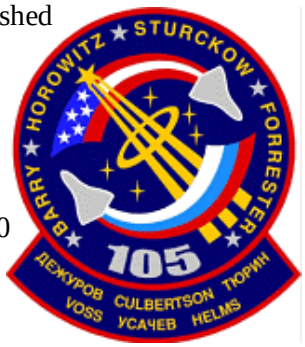
Capt Dan Theisen
External and International Affairs

Colonel Scott Horowitz, son of Aerospace DSP ground specialist Seymour Horowitz, is in space again. As commander of *Discovery*, Horowitz is on his second mission to the International Space Station (ISS).

On his last mission to Space Station *Alpha*, Horowitz was the pilot of *Atlantis*. On that trip, the third devoted to ISS construction, the *Atlantis* crew transported and installed over 5,000 pounds of equipment and supplies.

Discovery will deliver the Expedition Three crew to the station, and is also carrying the Leonardo Multi-Purpose Logistics Module. *Discovery* will bring the Expedition Two back to Earth on August 17.

An accomplished pilot, Horowitz flew the T-38 Talon, F-15 Eagle before becoming a test pilot in 1990 and later an astronaut for NASA.



General Ron Kadish (right), Director of the Ballistic Missile Defense Organization expresses interest in the capability of SBIRS Low while visiting the Spectrum Astro booth at the International Missile Defense Conference in the Netherlands. Photo courtesy Spectrum Astro

Volunteer team spreads the news about SBIRS

Captain Dan Theisen
External and International Affairs

The external affairs community relations effort, led by Ms Diane Huerta-Lomeli is taking the SBIRS display along with facts about the program and numerous posters and program-related materials to the masses.

The team, which includes volunteers from across the SBIRS government team, is looking to get the word out about SBIRS. Frequently the team also coordinates their efforts with our contractor partners.

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"This month we're going to a convention in Huntsville, Alabama where we're getting together with our M3P [Multi-Mission Mobile Processor] teammates to talk about SBIRS," Lomeli said. The M3P program office is located in Huntsville.

According to Lomeli, the team is always looking for energetic and enthusiastic volunteers.

"You don't have to know everything, just tell people what you do and how it fits in to the big picture," she said.

To volunteer contact Ms. Lomeli at 310-363-5626.

TRW/Raytheon SBIRS Low team demonstrates its compatibility with SBIRS System of Systems

Sally Koris
Manager, Public Relations, TRW

TRW and principal teammate Raytheon recently demonstrated the compatibility of the team's SBIRS Low design with the SBIRS missile defense architecture, known as the SBIRS System of Systems (SoS).

During a recent review that included representatives from the Air Force, user and test communities and the SBIRS SoS contractor, the team addressed internal and external interfaces between SBIRS Low and system components such as requirements, architecture, operations, and the ground element.

"SBIRS Low is a member of a family of systems that will share information to create a credible missile defense for the nation, so the components must be integrated seamlessly," said Pat Caruana, TRW vice president and SBIRS Low program manager. "We were able to draw on our team's extensive domain knowledge in missile defense to develop our solution."

The team's missile defense experience consists of a broad range of national programs, including the Defense Support Program, the Exoatmospheric Kill Vehicle, Ground-Based Radar, directed energy systems including the Airborne Laser and Space-Based Laser, and Battle Management Command, Control and Communication (BMC^3).

"The success of the review is another indicator that we're on track to deliver an innovative and cost effective SBIRS Low system that meets the government's performance objectives," Caruana said.

Spectrum Astro moves SBIRS Low operations into new hi-tech facility

Mike Greenwood
Manager, Public Affairs, Spectrum Astro

Spectrum Astro's all-new SBIRS Low design facility is complete and fully operational. The new facility was added to existing office space at the company's Headquarters in Gilbert, Arizona. Totaling over 41,000 square feet, the building includes numerous state-of-the-art features that will further enhance Spectrum Astro efforts as a Prime Contractor in the Program Definition and Risk Reduction phase of the SBIRS Low program.

Spectrum's staff began occupying the new facility on August 1. The facility can house more than 200 SBIRS Low support personnel in dedicated, multi-security level spaces. It includes 12 new conference rooms of various sizes, plus a new state-of the-art video teleconferencing center, expanded secure laboratory areas for modeling and simulation, plus dedicated areas for graphics support, classified reproduction, and an enhanced missile defense library. The heating, ventilation and air conditioning systems provide redundancy to critical computing areas for non-stop computing, plus high volumes of fresh outside air for increased employee wellness. High-efficiency lighting fixtures provide nearly twice the light as old-fashioned fixtures at one-half the power consumption.

"This uniquely configured facility comes on line at a very optimal time to support the Integrated Product Teams that are performing the preliminary design of SBIRS Low," said Scott Yeakel, Spectrum Astro Vice President, SBIRS Low. "In addition, it is set up to facilitate a smooth transition directly into the Engineering and Manufacturing Development phase."

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TEST:
Infrared/radar data fusion demonstration a success

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While they were also pleased to see the test was a resounding success, their eyes were elsewhere.

The team watched data stream in on the Mutli-Source Fusion Engine (MSFE) and were satisfied that their two objectives, 1) to collect as much infrared and radar data as possible and 2) to perform real-time boost phase and midcourse track fusion using the MSFE, were both successful.

The team plans to use the collected data to perform analysis and demonstrate the benefits of fusing infrared and radar data in discriminating lethal objects from non-lethal objects.

"We were able to obtain numerous sensor collects and ample data for the post-test analysis, despite the fact that AMOS was unable to view the targets because of cloud cover" Major Juan Echeverry from the SBIRS Low program said.

"The [real-time fusion] effort was very successful in fusing both infrared and radar data from a number of different sources and provided a fused infrared/radar track of the objects in the package. The MSFE also allowed the team to view what was happening during the launch in near real-time over a projection system," Echeverry explained.

Echeverry said the mission provided a foundation for continued participation on future missile launches and tests.

From left: Dr. Bill Hatton, Major Juan Echeverry, Lieutenants Scott Schweitzer, Lt Felix Isupov, Captain T.J. Reyes and Major Joe Taylor at the Maui test complex.